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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/777,942	02/06/2001	Jack Wilbur Baldwin	13DV13491	3254

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EXAMINER

KOPPIKAR, VIVEK D

ART UNIT	PAPER NUMBER
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1775

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DATE MAILED: 10/21/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/777,942

Applicant(s)

BALDWIN, JACK WILBUR

Examiner

Vivek D Koppikar

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 September 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 11-14 and 18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11-14 and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

FINAL OFFICE ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –(e) the invention was described in-
(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

2. Claims 1, 2, 3, 10-12, 14 and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Colegrove.
3. Colegrove (US Patent Number 6,096,669) is directed towards a method of applying patterned resin film to a layer of unidirectional fibers.

With regard to Claim 1, Colegrove discloses aligning fibers in order to form at least one layer (Colegrove, Col. 3, Ln. 62-65). Next a resin grid film on release paper is applied to one or both sides of the fibers (Colegrove, Figure 3). The resin, which is polymeric curable, is in the form of grid such that only a fraction of the surface area of the fibers contact the curable resin film grid (discontinuous layer) (Colegrove, Figures 1-3 and Col. 2, Ln.50-67 and Col. 3, Ln. 41-58). PR500® may be used as a resin in combination with PT500® epoxy resin, which is a powered tackifier (Colegrove, Col. 3, Ln. 32-42).

With regard to Claim 2, Colegrove shows that the patterned discontinuous layer of tackifier resin is applied by a patterned roller (Colegrove, Col 2, Ln. 41-57).

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With regard to Claim 3, the tackifier resin is applied by a release paper (Colegrove, Figure 2 and Col. 2, Ln. 47-53).

With regard to Claim 10, although Colegrove does not expressly recite that the tackifier resin is forced into the fibers one in the art would expect this to occur in order for the reinforcing fibers to be held together.

With regard to Claims 11-12, Colegrove discloses wrapping the preform onto a take up roller (28) after it has been formed (Colegrove, Figure 4). One of ordinary skill would have expected that the final preform to be shipped or transported for subsequent use a composite structure.

With regard to Claim 14, Colegrove produces a preform using the process of Claim 1 of the instant invention (Colegrove, Abstract and Figure 5).

With regard to Claim 18, Colegrove discloses forming a layer of reinforcing fibers and applying a coating of tackifier curable-resin to at least one of the sides of the reinforcing fibers as noted above. Colegrove also goes on to say that after the tackifier resin is applied to the reinforcing fibers the individual plies may be shaped and the preform may then be molded. The preform is manufactured such that fibers have a resin content which is sufficient to hold the fibers in a desired shape but also small enough to leave the resulting preform porous so that it can be impregnated with matrix resin during subsequent molding processes (Colegrove, Col. 1, Ln. 39-47 and Col. 5, Ln. 49-59). One would expect this matrix resin to be in liquid form so it could penetrate through the pores of the preform.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 7, 9 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Colegrove.

With regard to Claim 7, Colegrove does not expressly recite the claimed ranges for the areal weight of the tackifier resin. However Colegrove suggests that varying several properties, such as reducing the viscosity of the resin and the temperature of the patterned rollers, contribute to obtaining a lower tackifier resin film weight (Colegrove, Col. 2, Ln. 54-67). Therefore at the time of the invention, one of ordinary skill in the art would have expected that as the viscosity of the resin used decreased its weight percent in the preform would also decrease to the interval in the claimed ranges. Moreover, one of ordinary skill in the art would expected that the choice of a particular resin would influence its particular weight percent of the total weight of the preform.

With regard to Claim 9, it is noted from above that Colegrove recites using various types of patterns which could include a herringbone pattern. It would have been obvious to use a particular pattern, such as a herringbone pattern, at the time of the invention, in order to apply the optimal amount of resin onto the fibers so that the fibers would hold together in a desired shape while still leaving pores in the preform such that liquid resin could impregnate the preform in the subsequent injection molding process. The exact type of pattern used would depend on the type of the fibers that were employed.

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With regard to Claim 13, one of ordinary skill in the art would have recognized that after the preform was manufactured it would have to be cut and stacked so that it could be packed into shipping containers of various sizes to be transported.

6. Claims 4-6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Colegrove in view of Lopez and Alderfer.

With regard the Claim 4, as noted above Lopez shows applying a discontinuous layer of tackifier resin using a spray nozzle and Alderfer discloses applying a resin in a patterned arrangement, wherein the resin is applied not as a film. At the time of the invention, it would have been obvious to one of ordinary skill in the art that the patterned resin used in Colegrove could have alternatively been applied using a spray nozzle as is shown by Lopez in view of Alderfer (Lopez, Col. 7, Ln. 48-53, Alderfer, Col.2, Ln. 17-55).

With regard to Claim 5, the types of reinforcing fibers recited are well known, as evidenced in the prior art acknowledged in the specification. At the time of the invention, one of ordinary skill in the art would have used these types of fibers in order to provide make a strong and durable composite material (Specification, Page 6, Lines 1-7).

With regard to Claim 6, the types of tackifier resins recited are well known, as evidenced in Lopez and in the prior art acknowledged in the specification. At the time of the invention one of ordinary skill in the art would have used these resins because of their strong tackifier and curing properties so that they would harden by the time the individual plies were placed in the mold for the RTM process (Lopez, Col. 2, Ln. 61-65 and Specification (Instant Application), Page 7, Lines 17-18).

With regard to Claim 8, Lopez recites the volume percentages of the tackifier resin (Lopez, Col. 4, Ln. 1-14).

Response to Arguments

7. The rejection under 35 USC 102(b) over US Patent Number 5,480,603 to Lopez has been withdrawn. The arguments were fully persuasive.

The rejection under 35 USC 103(a) over Lopez in view of Alderfer has also been withdrawn. The arguments were fully persuasive.

Applicant's arguments in regards to the 35 USC 102 and 35 USC 103 rejection of US Patent Number 6,096,669 to Colegrove and US Patent Number 6,096,669 to Colegrove in view of US Patent Number 5,480,603 to Lopez and US Patent Number 2,207,279 to Alderfer have been fully considered but they are not persuasive.

The arguments will be addressed in the same order as they are addressed by the applicants in amendment A.

Applicants argue that in Colegrove an elevated pressure and temperature are used to transfer a resin film grid onto a fiber mat whereas in the instant invention the resin is "forced" into the fibers. Applicants also state that the Colegrove reference states that multiple resin grids are being transferred to multiple fiber layers whereas in the instant invention resin is being forced onto a single layer of fibers. The examiner also notes that the applicants have amended the claim to recite the additional limitation "wherein a predetermined quantity of tackifier resin being forced into a number of fibers."

To respond to these arguments, the examiner takes the position that since Colegrove applies the resin film grid by using a release paper at an elevated temperature it is inherent that

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this process forces the resin into the fibers. In addition the resin film grid has a predetermined quantity of resin that is applied to the fibers, the resin is not free-flowing (Col.4, Ln. 1-51). The fact that Colegrove uses multiple fiber layers while the applicant uses a single fiber layer does not make the invention patentably distinct over Colegrove. In addition Colegrove states that the resin transfer molding process can be applied to "one or more layers of non-woven random mat." The examiner takes the position that "one or more" includes a single fiber layer (Col. 1, Ln. 50-55).

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.


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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Vivek Koppikar** whose telephone number is **(703) 305-6618**.

The examiner can normally be reached on Monday-Friday from 8 AM to 5 PM, Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones, can be reached at (703) 308-3822. The fax phone numbers for the organization where this application or proceeding are assigned are (703) 305-7718 for regular communications and (703) 305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.


Vivek Koppikar

10/9/02


DEBORAH JONES
SUPERVISORY PATENT EXAMINER